FIG. 1

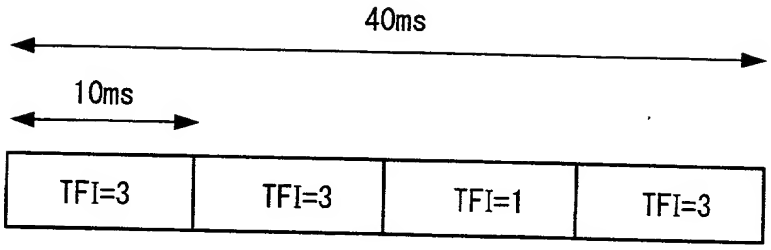
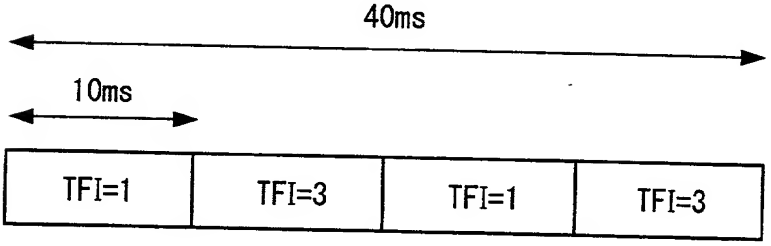


FIG. 2



RELIABILITY Q	0.75	0.55	0.70	0.40
HIGHEST LIKELIHOOD	120	100	150	120

EP 1 863 196 A1

FIG. 3

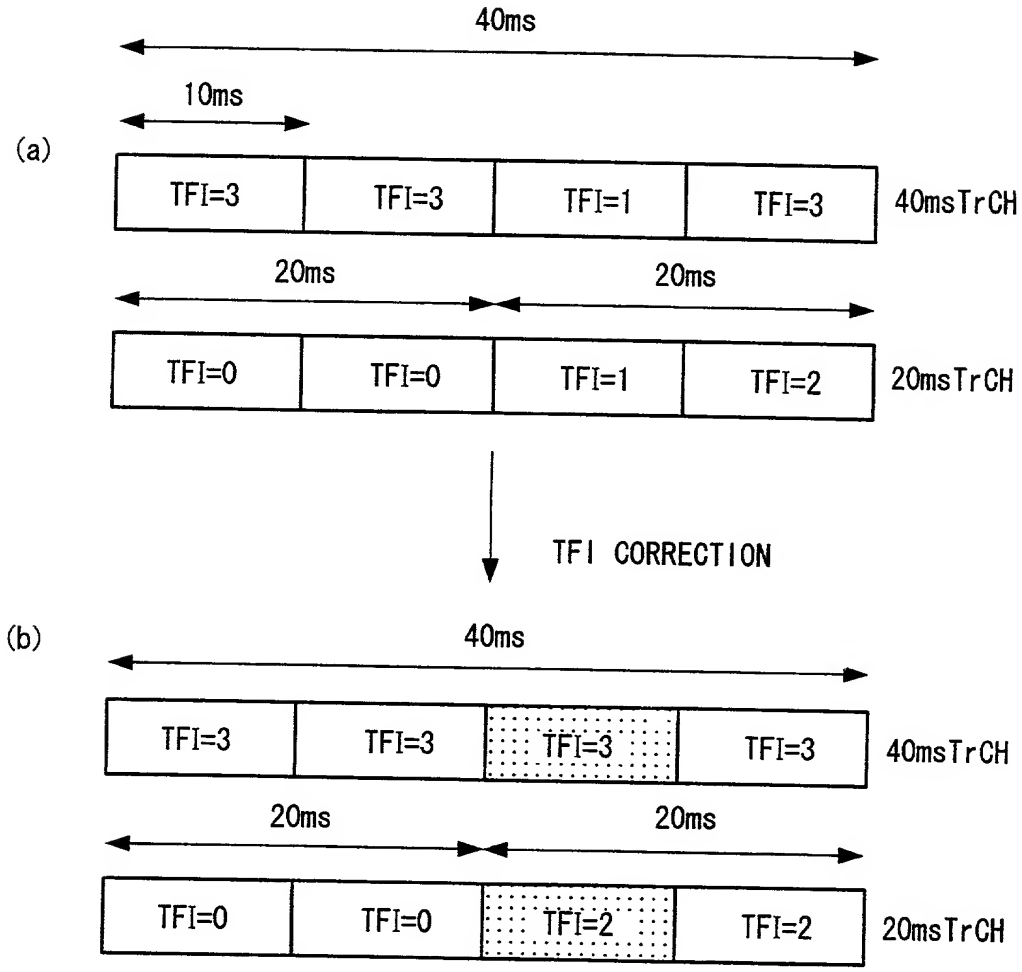

40ms
10ms
(a)
TFI=3
TFI=3
TFI=1
TFI=3
40msTrCH
20ms
20ms
TFI=0
TFI=0
TFI=1
TFI=2
20msTrCH
TFI CORRECTION
(b)
40ms
TFI=3
TFI=3
TFI=3
TFI=3
40msTrCH
20ms
20ms
TFI=0
TFI=0
TFI=2
TFI=2
20msTrCH

FIG. 4A

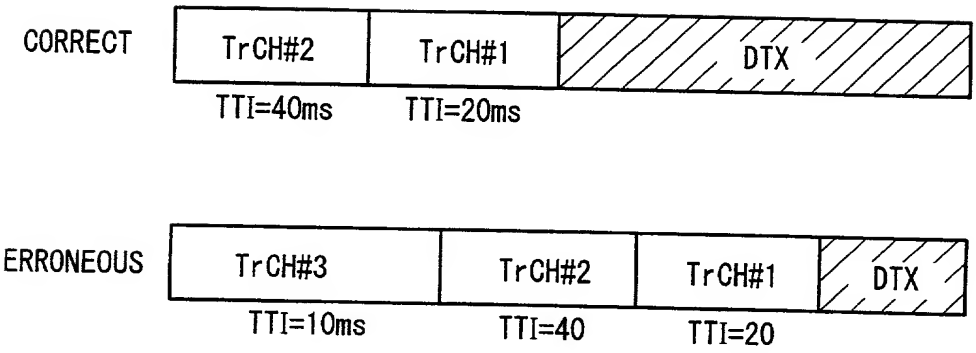
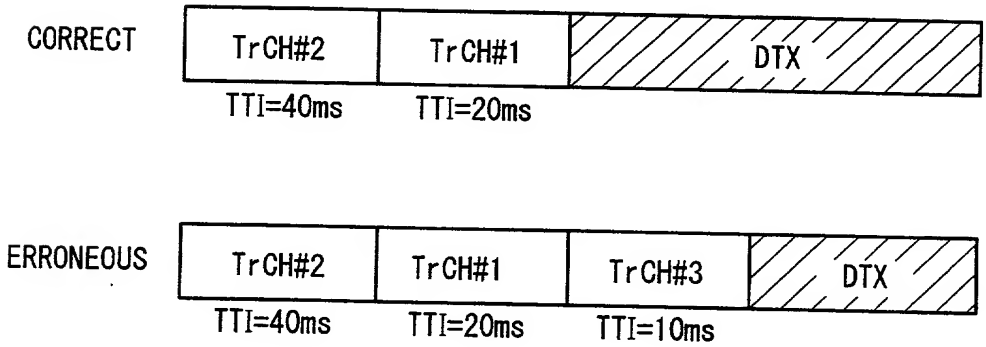


FIG. 4B



EP 1 089 456 A2

FIG. 5

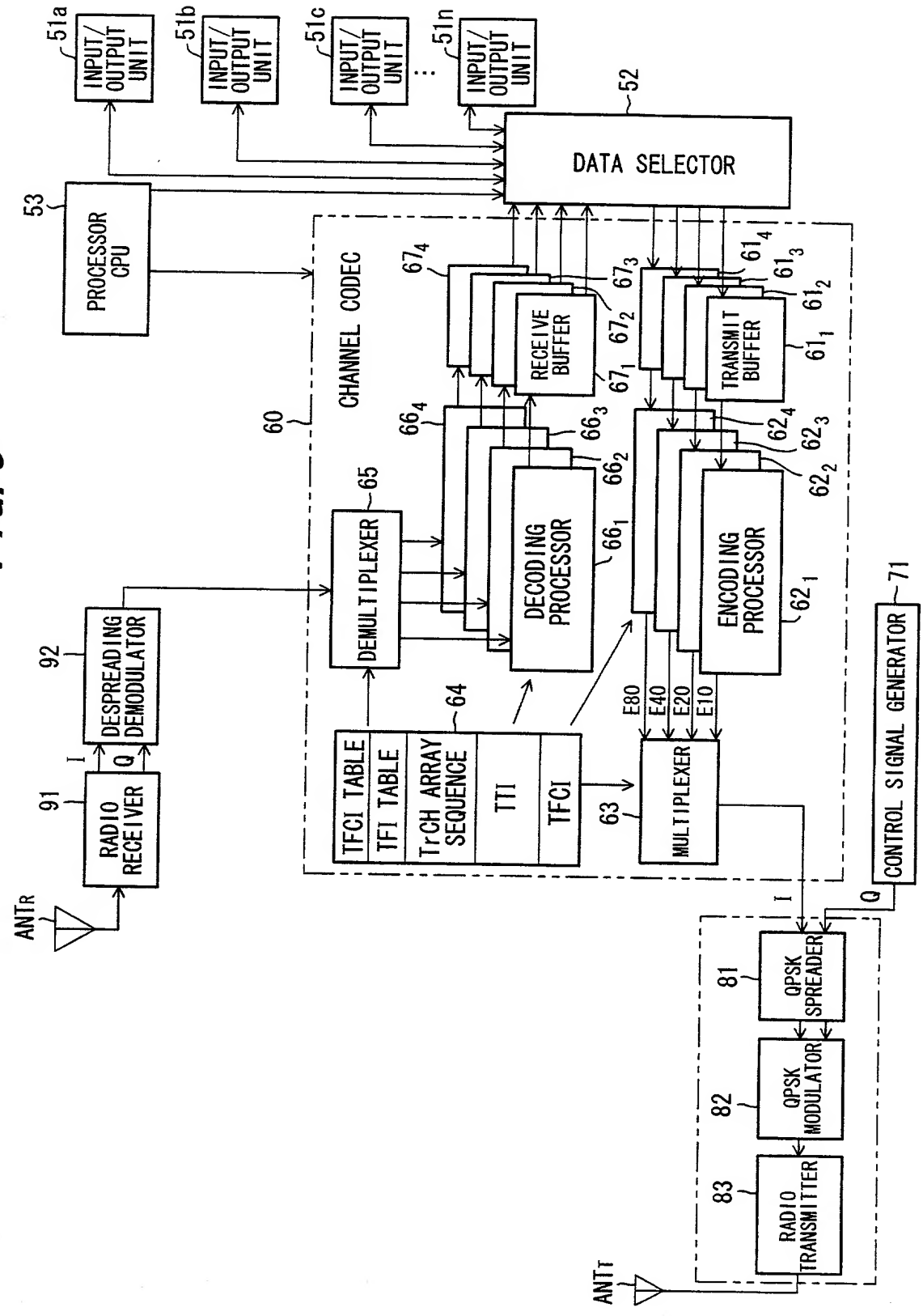

INPUT/OUTPUT UNIT
51a
51b
51c
51n
DATA SELECTOR
52
PROCESSOR CPU
53
CHANNEL CODEC
60
RECEIVE BUFFER
TRANSMIT BUFFER
DEMULTIPLEXER
65
DECODING PROCESSOR
ENCODING PROCESSOR
TFCI TABLE
TFI TABLE
TrCH ARRAY SEQUENCE
TTI
TFCI
64
MULTIPLEXER
63
E80
E40
E20
E10
CONTROL SIGNAL GENERATOR
71
DESPREADING DEMODULATOR
92
RADIO RECEIVER
91
I
Q
ANTR
QPSK SPREADER
81
QPSK MODULATOR
82
RADIO TRANSMITTER
83
ANTT

FIG. 6A

TFI TABLE

TFI	FORMAT OF TrCH#1	FORMAT OF TrCH#2
0	336bit × 0	148bit × 0
1	336bit × 1	148bit × 1
2	336bit × 2	—
3	336bit × 4	—

FIG. 6B

TFCI TABLE

TFCI	FORMAT OF TrCH#1	FORMAT OF TrCH#2
0	TFI#0(336bit × 0)	TFI#0(148bit × 0)
1	TFI#0	TFI#1(148bit × 1)
2	TFI#1(336bit × 1)	TFI#0
3	TFI#1	TFI#1
4	TFI#2(336bit × 2)	TFI#0
5	TFI#2	TFI#1
6	TFI#3(336bit × 4)	TFI#0
7	TFI#3	TFI#1

EP 0 967 808 A2

FIG. 7

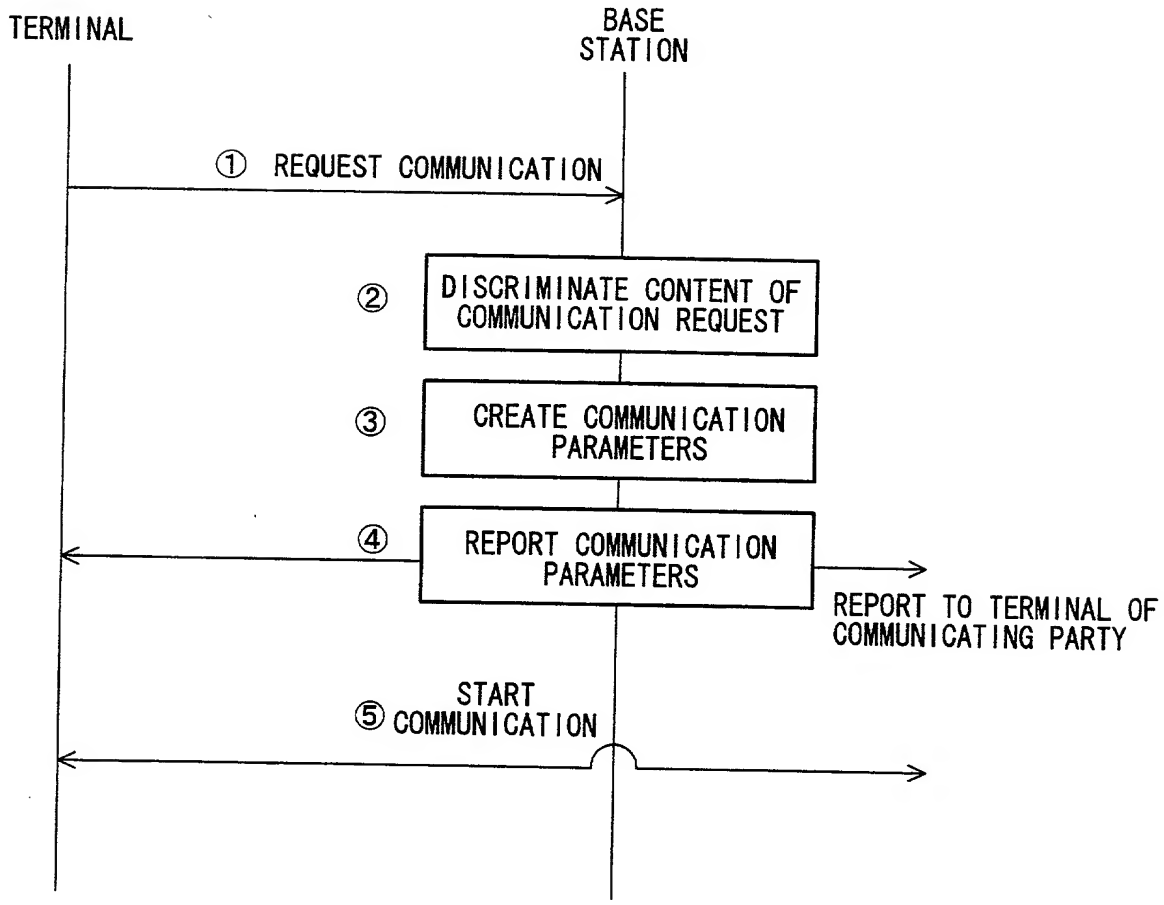

TERMINAL
BASE STATION
① REQUEST COMMUNICATION
②
DISCRIMINATE CONTENT OF COMMUNICATION REQUEST
③
CREATE COMMUNICATION PARAMETERS
④
REPORT COMMUNICATION PARAMETERS
REPORT TO TERMINAL OF COMMUNICATING PARTY
START
⑤ COMMUNICATION

FIG. 8

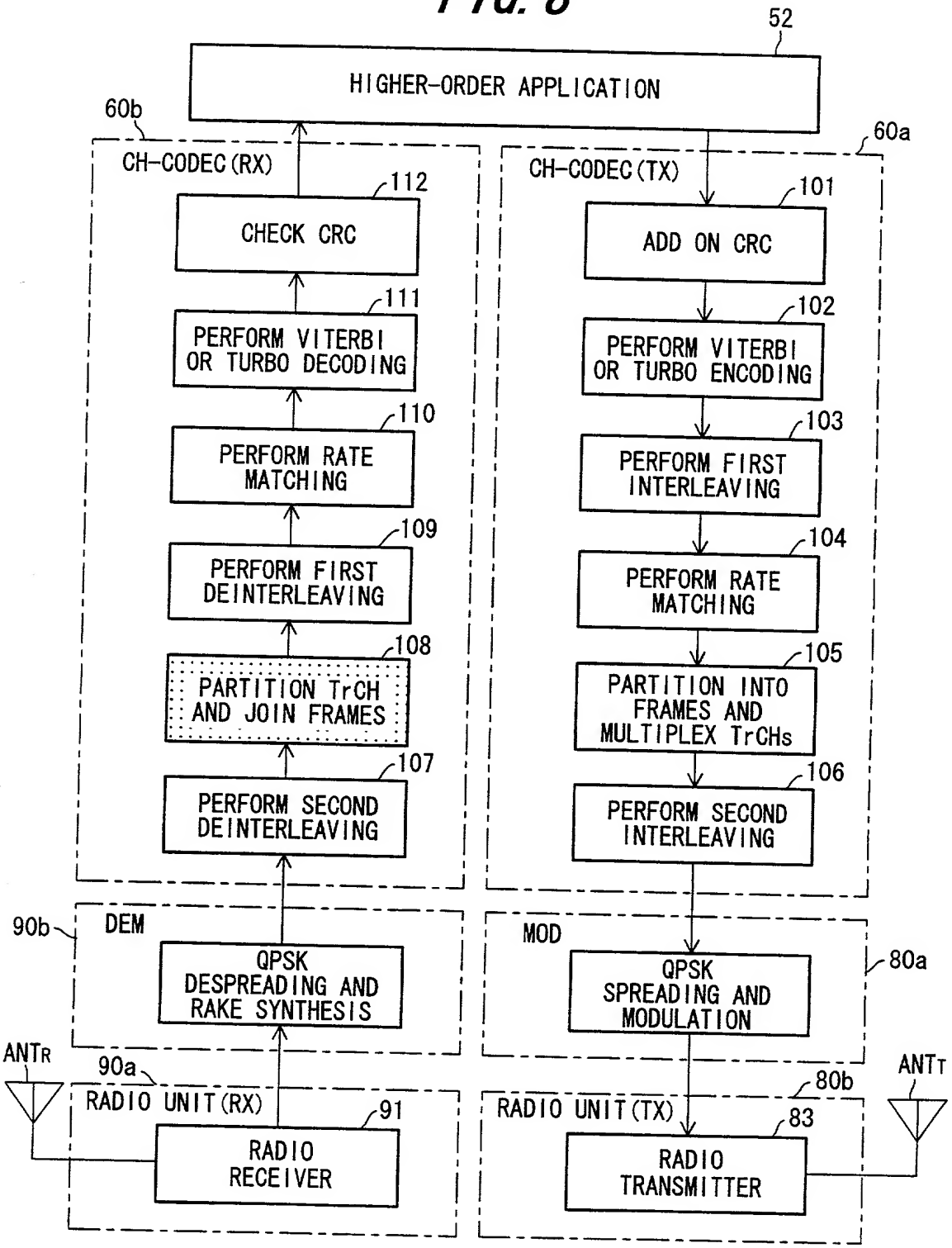

52
HIGHER-ORDER APPLICATION
60b
CH-CODEC(RX)
112
CHECK CRC
111
PERFORM VITERBI OR TURBO DECODING
110
PERFORM RATE MATCHING
109
PERFORM FIRST DEINTERLEAVING
108
PARTITION TrCH AND JOIN FRAMES
107
PERFORM SECOND DEINTERLEAVING
60a
CH-CODEC(TX)
101
ADD ON CRC
102
PERFORM VITERBI OR TURBO ENCODING
103
PERFORM FIRST INTERLEAVING
104
PERFORM RATE MATCHING
105
PARTITION INTO FRAMES AND MULTIPLEX TrCHs
106
PERFORM SECOND INTERLEAVING
90b
DEM
QPSK DESPREADING AND RAKE SYNTHESIS
MOD
QPSK SPREADING AND MODULATION
80a
ANTR
90a
RADIO UNIT(RX)
91
RADIO RECEIVER
80b
RADIO UNIT(TX)
83
RADIO TRANSMITTER
ANTT

FIG. 9

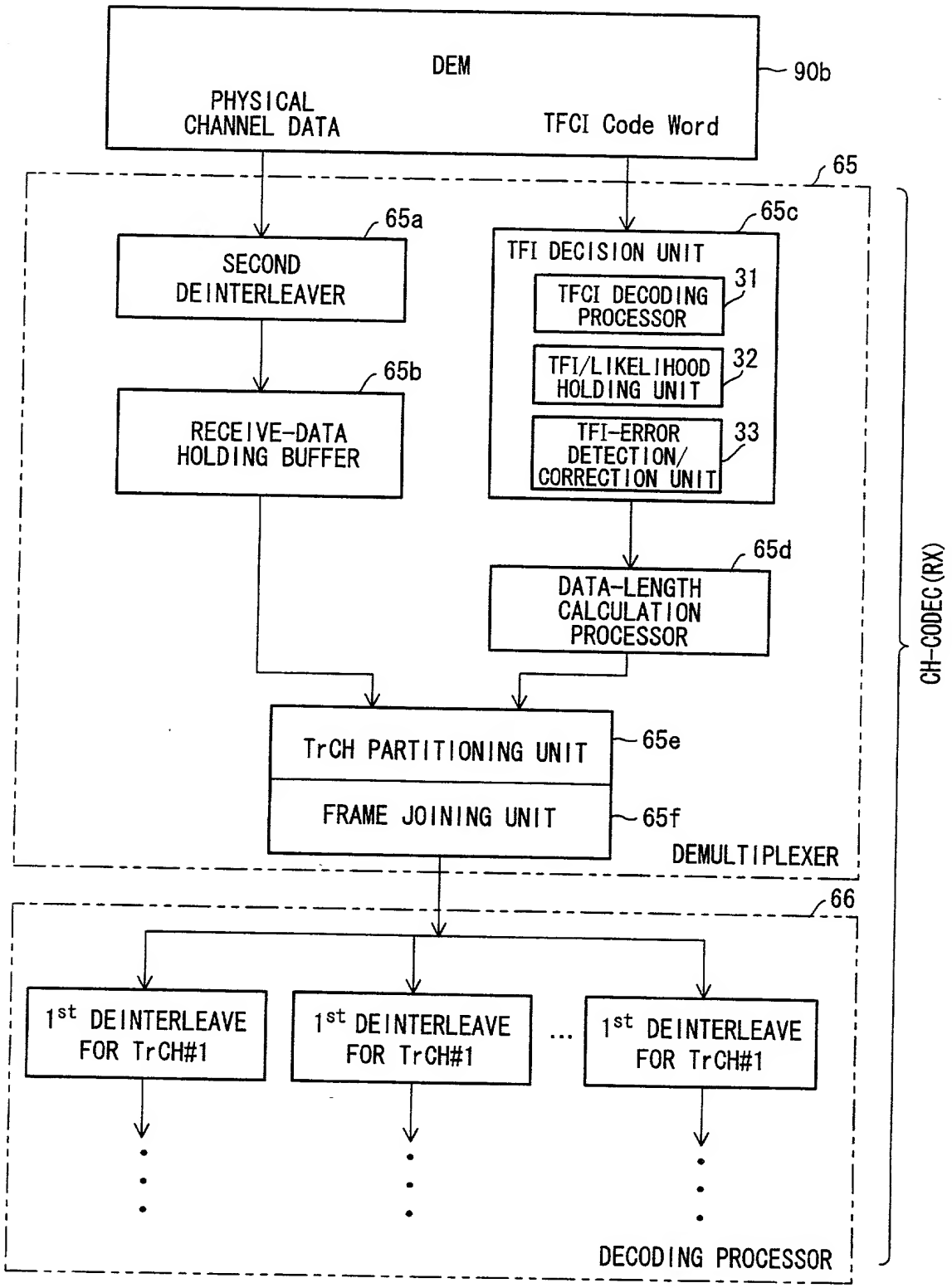
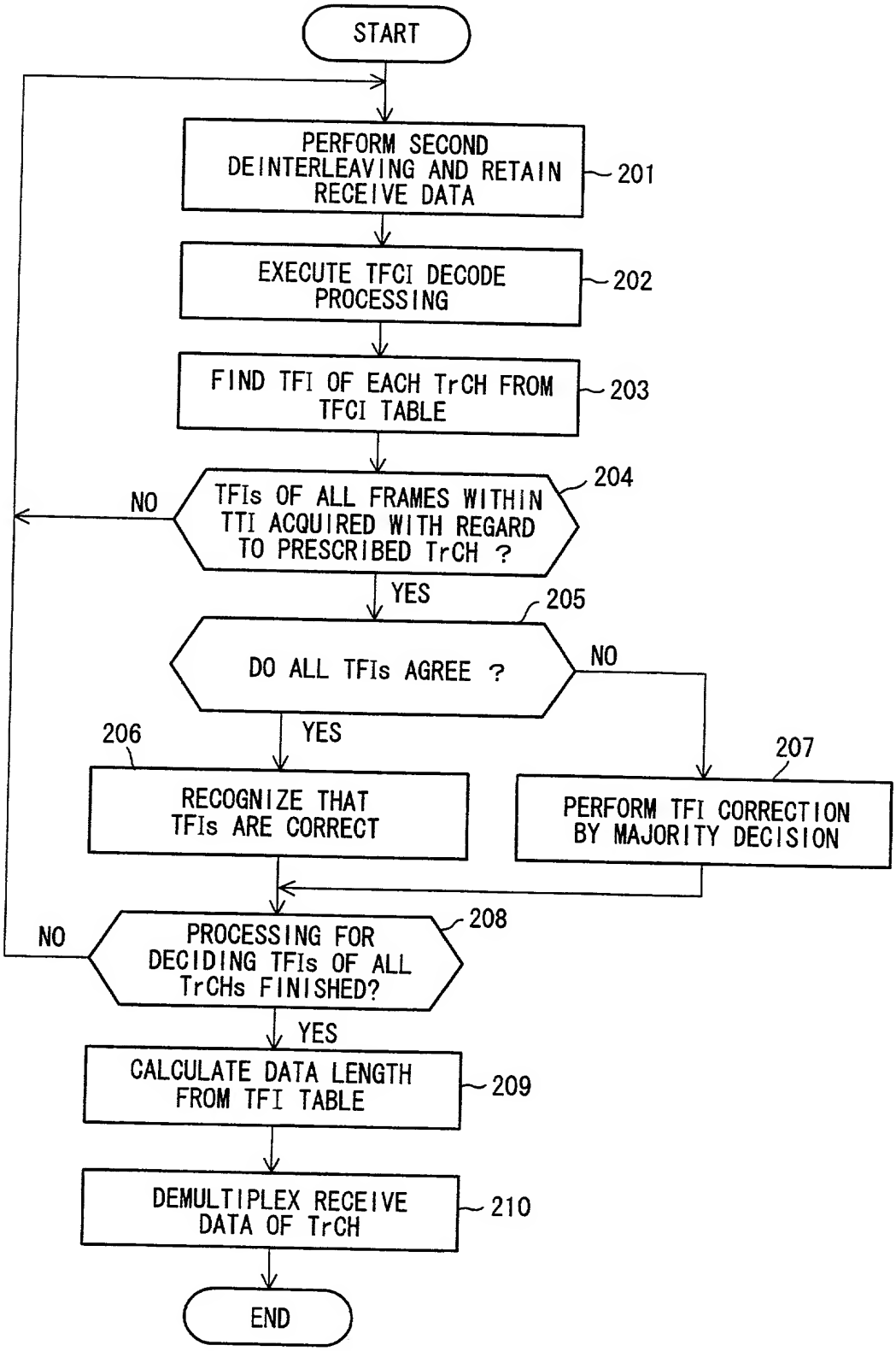
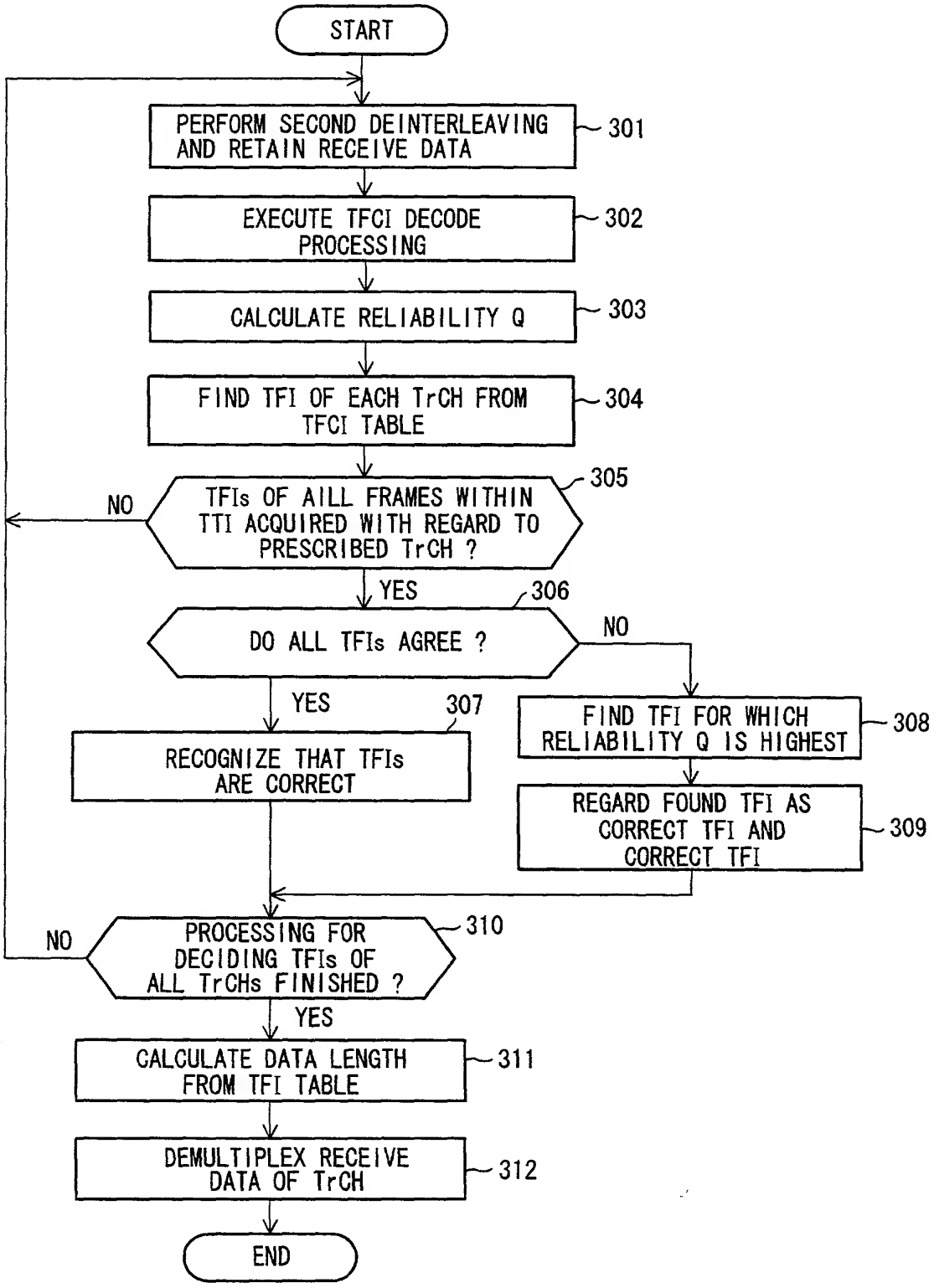

DEM
90b
PHYSICAL CHANNEL DATA
TFCI Code Word
65
65a
SECOND DEINTERLEAVER
65b
RECEIVE-DATA HOLDING BUFFER
65c
TFI DECISION UNIT
TFCI DECODING PROCESSOR
31
TFI/LIKELIHOOD HOLDING UNIT
32
TFI-ERROR DETECTION/ CORRECTION UNIT
33
65d
DATA-LENGTH CALCULATION PROCESSOR
TrCH PARTITIONING UNIT
65e
FRAME JOINING UNIT
65f
DEMULTIPLEXER
66
1st DEINTERLEAVE FOR TrCH#1
1st DEINTERLEAVE FOR TrCH#1
...
1st DEINTERLEAVE FOR TrCH#1
DECODING PROCESSOR
CH-CODEC(RX)

FIG. 10



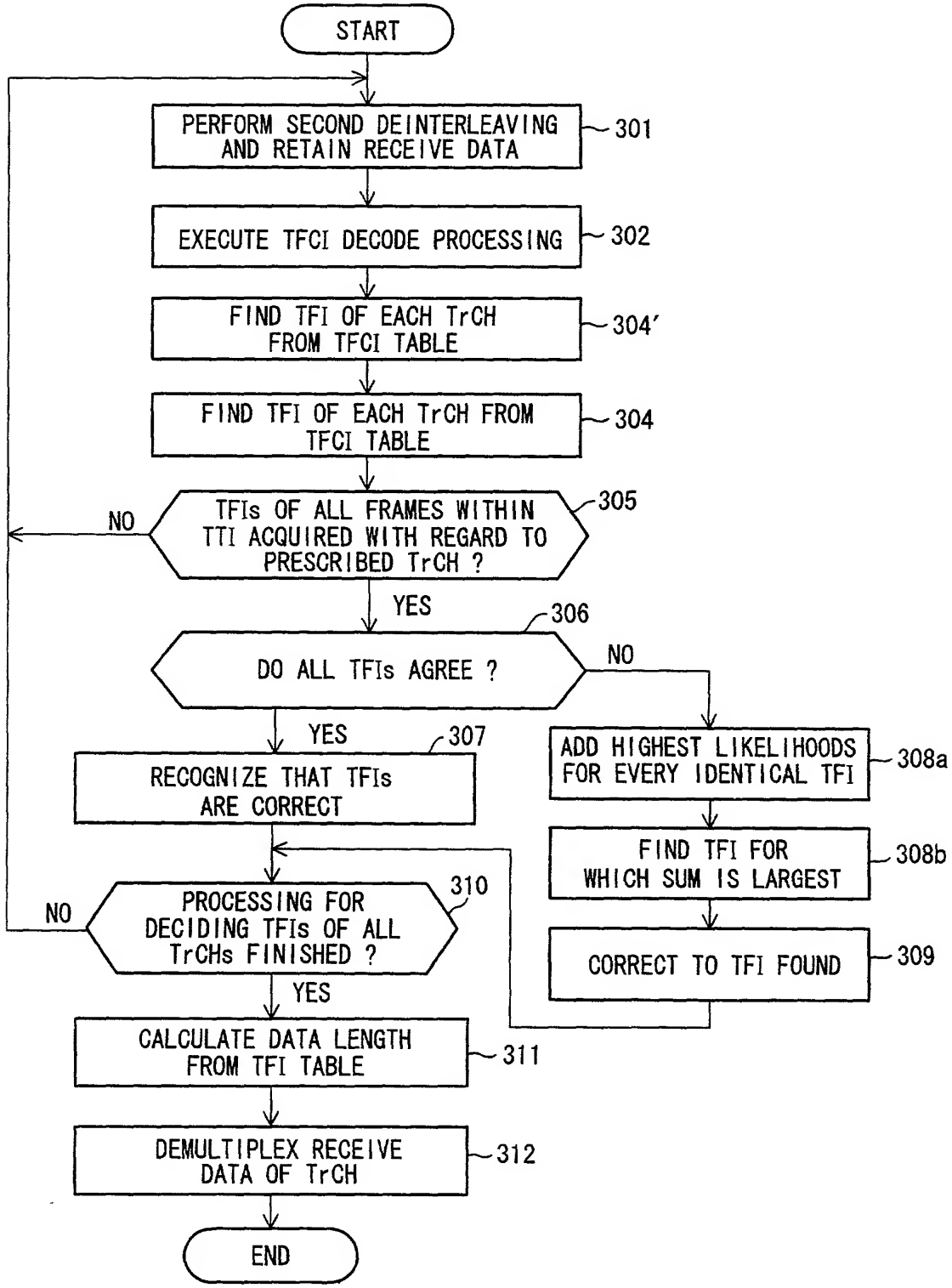
EP03788305.0 2006.08.30

FIG. 11



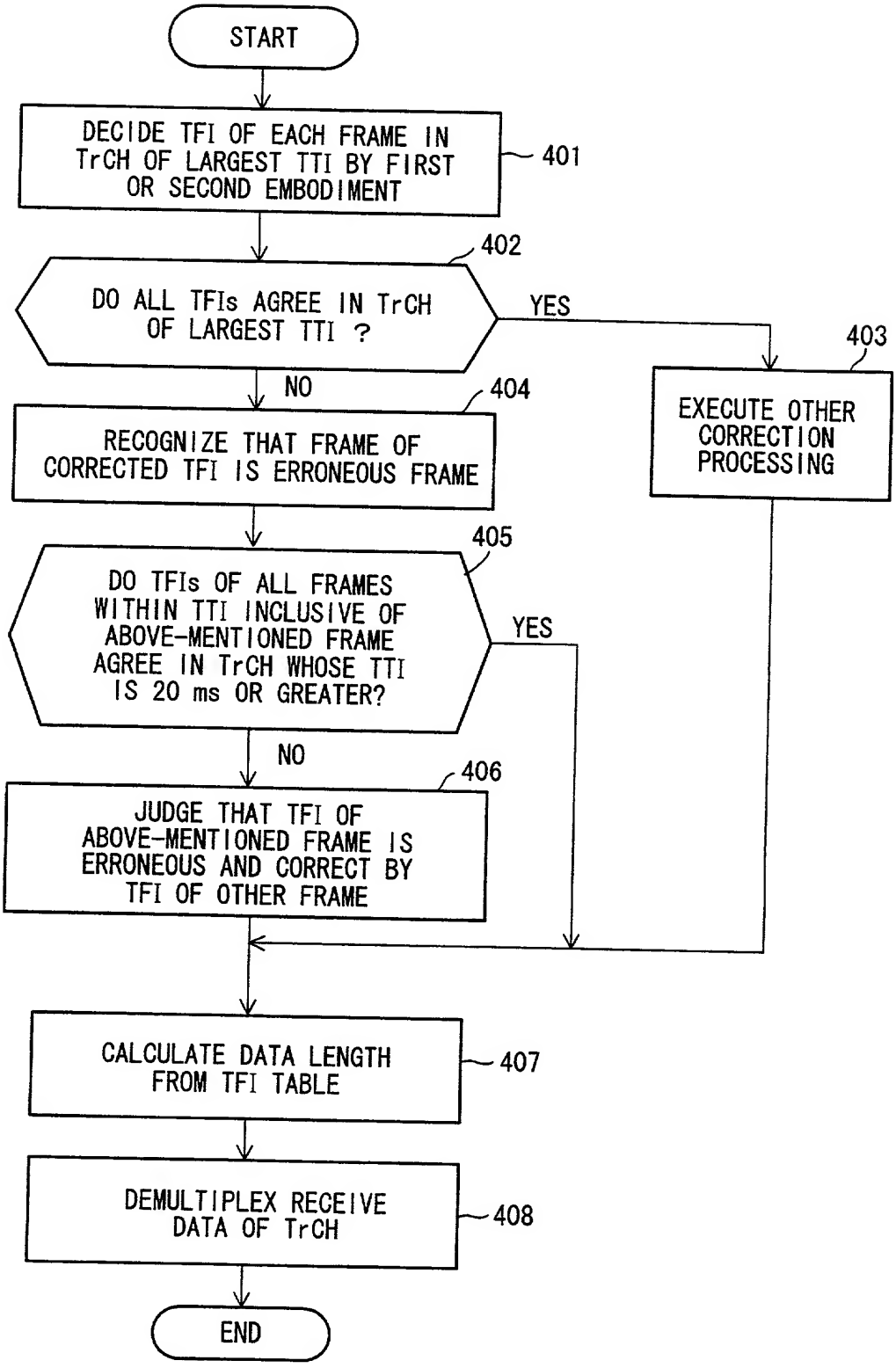
EP 0 993 136 A2

FIG. 12



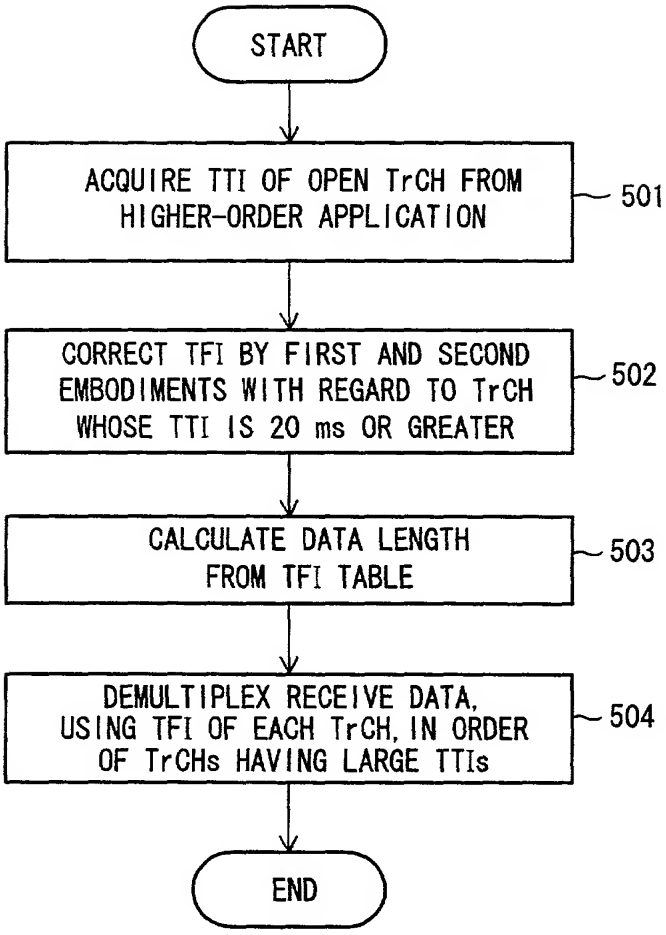
EP 1 006 686 A2

FIG. 13



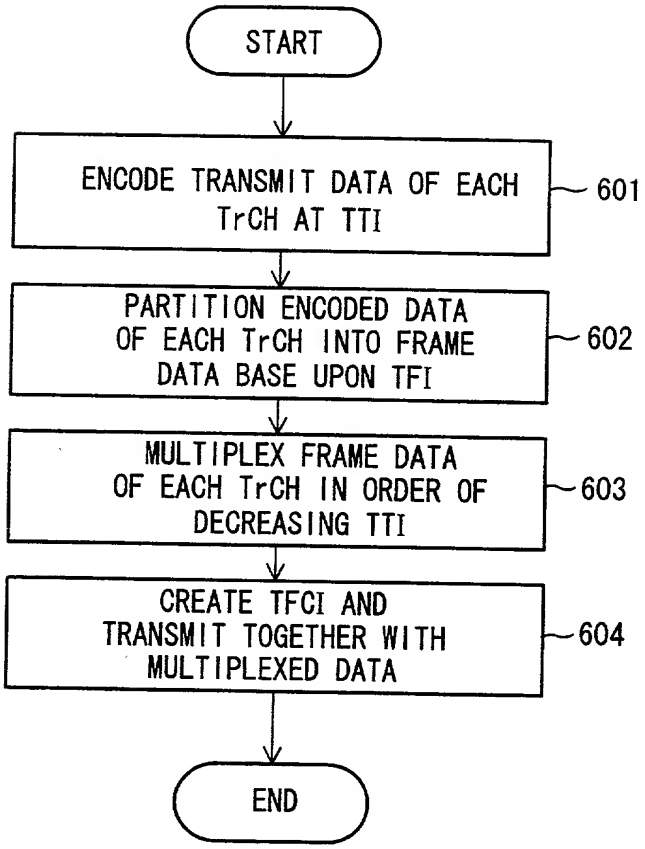
EP 1 605 606 A2 20050414

FIG. 14



EP 3 595 183 A1

FIG. 15



EP 1 093 269 A2

FIG. 16A

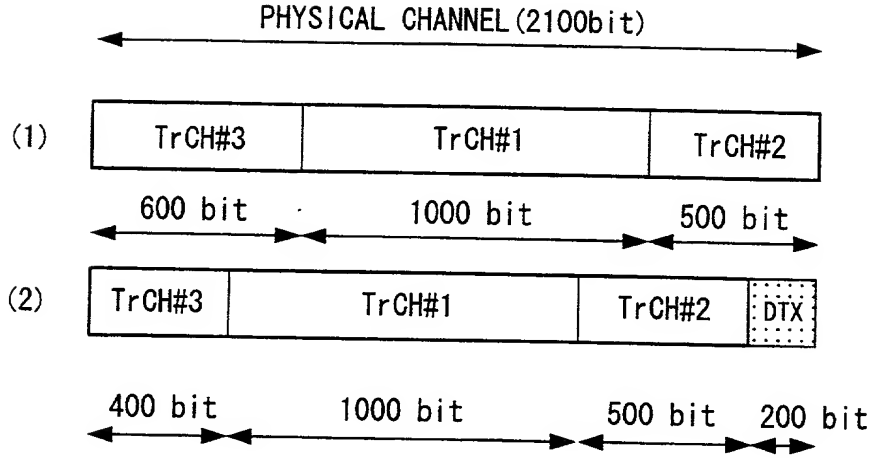


FIG. 16B

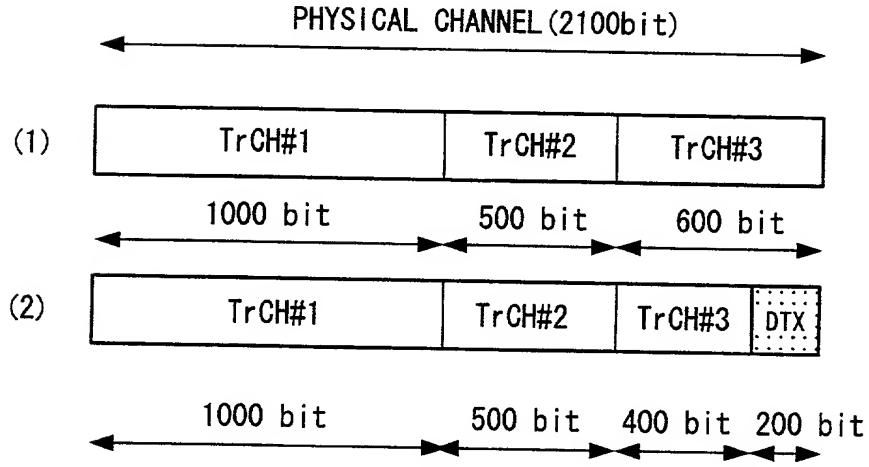
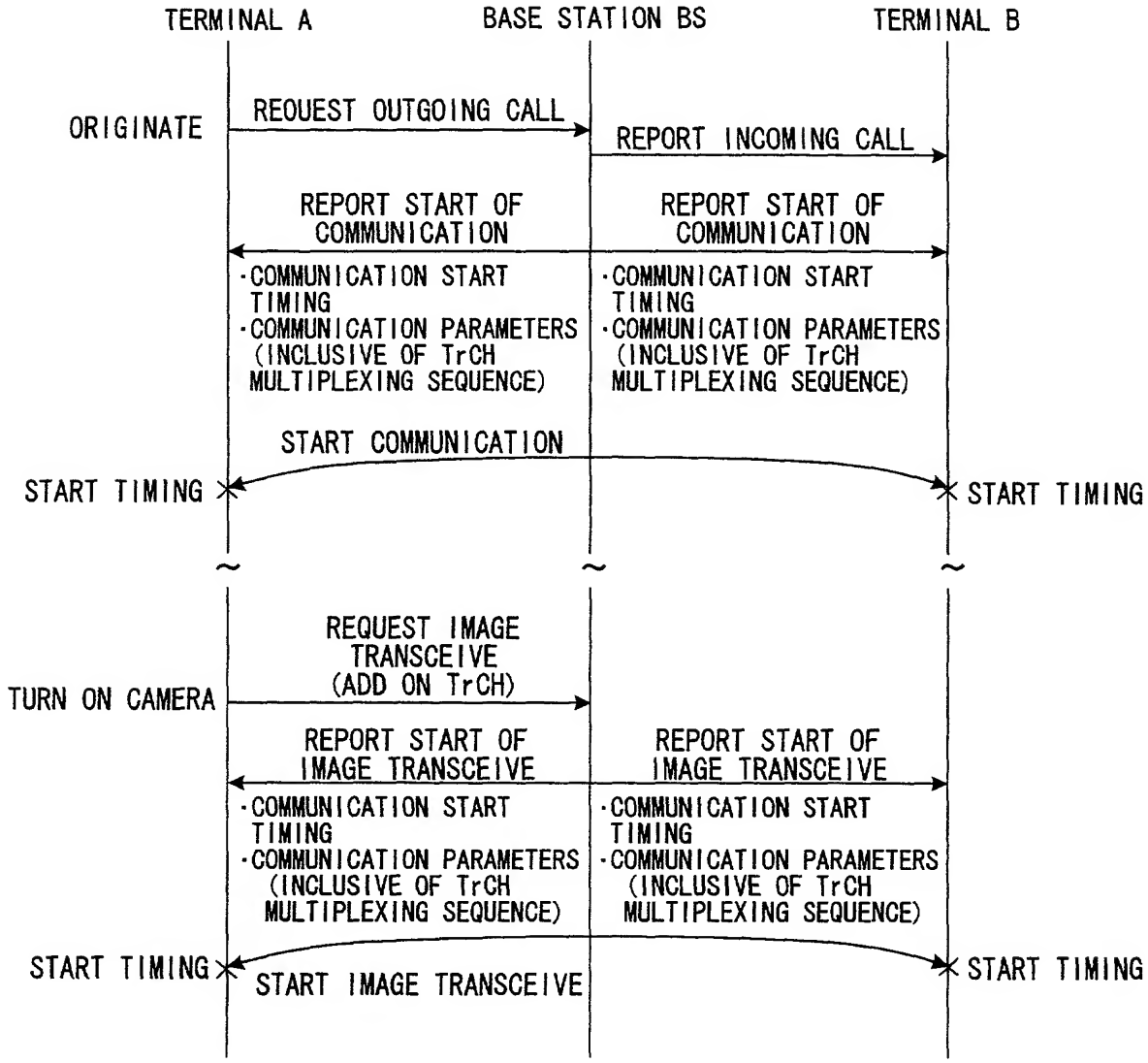


FIG. 17



EP 1 838 054 A1

FIG. 18

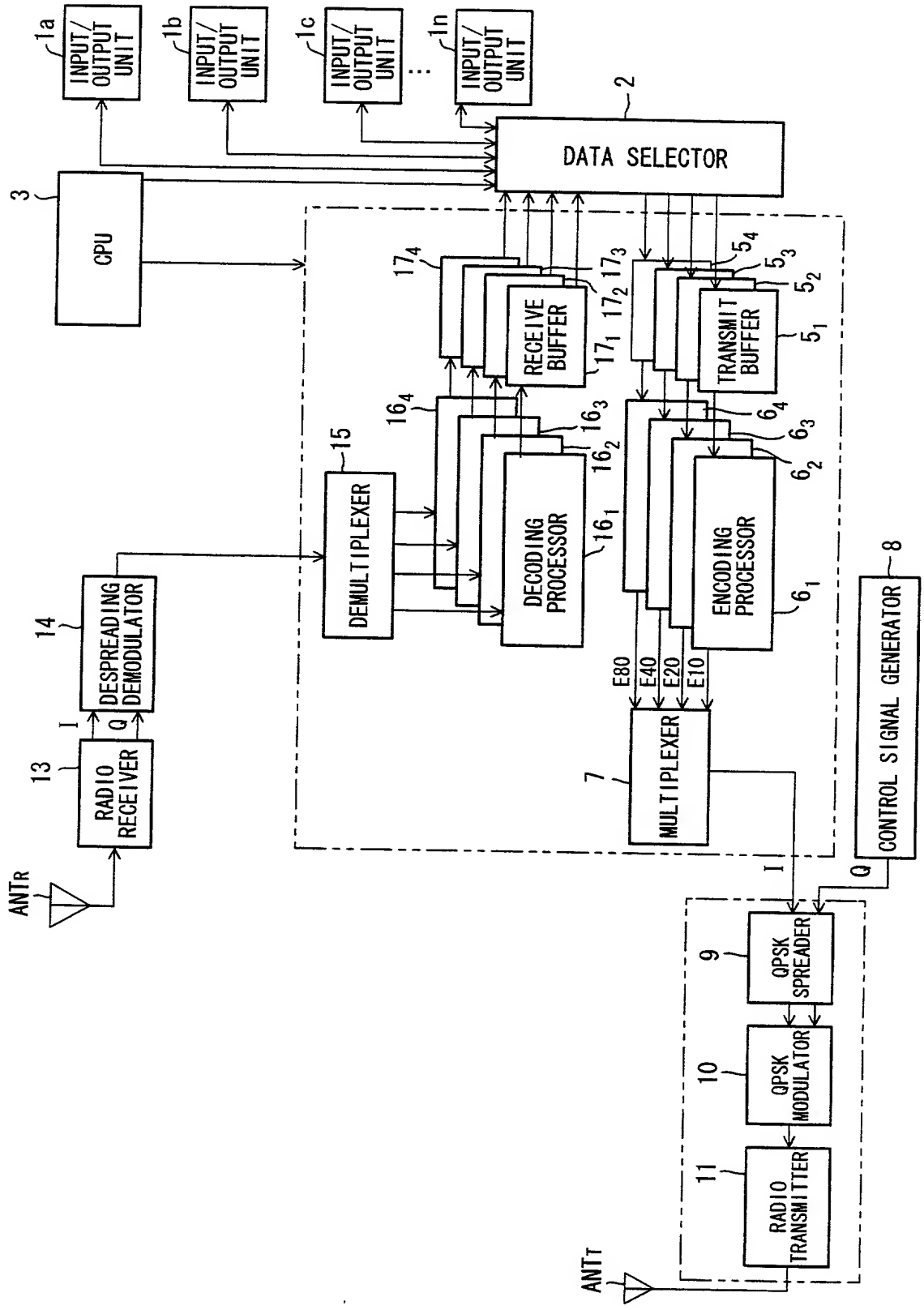

1a
INPUT/OUTPUT UNIT
1b
INPUT/OUTPUT UNIT
1c
INPUT/OUTPUT UNIT
1n
INPUT/OUTPUT UNIT
2
DATA SELECTOR
3
CPU
17 4
17 3
17 2
17 1
RECEIVE BUFFER
5 4
5 3
5 2
5 1
TRANSMIT BUFFER
16 4
16 3
16 2
16 1
DECODING PROCESSOR
15
DEMULTIPLEXER
6 4
6 3
6 2
6 1
ENCODING PROCESSOR
E80
E40
E20
E10
7
MULTIPLEXER
8
CONTROL SIGNAL GENERATOR
14
DESPREADING DEMODULATOR
13
RADIO RECEIVER
I
Q
ANTR
I
Q
9
QPSK SPREADER
10
QPSK MODULATOR
11
RADIO TRANSMITTER
ANTT

FIG. 19

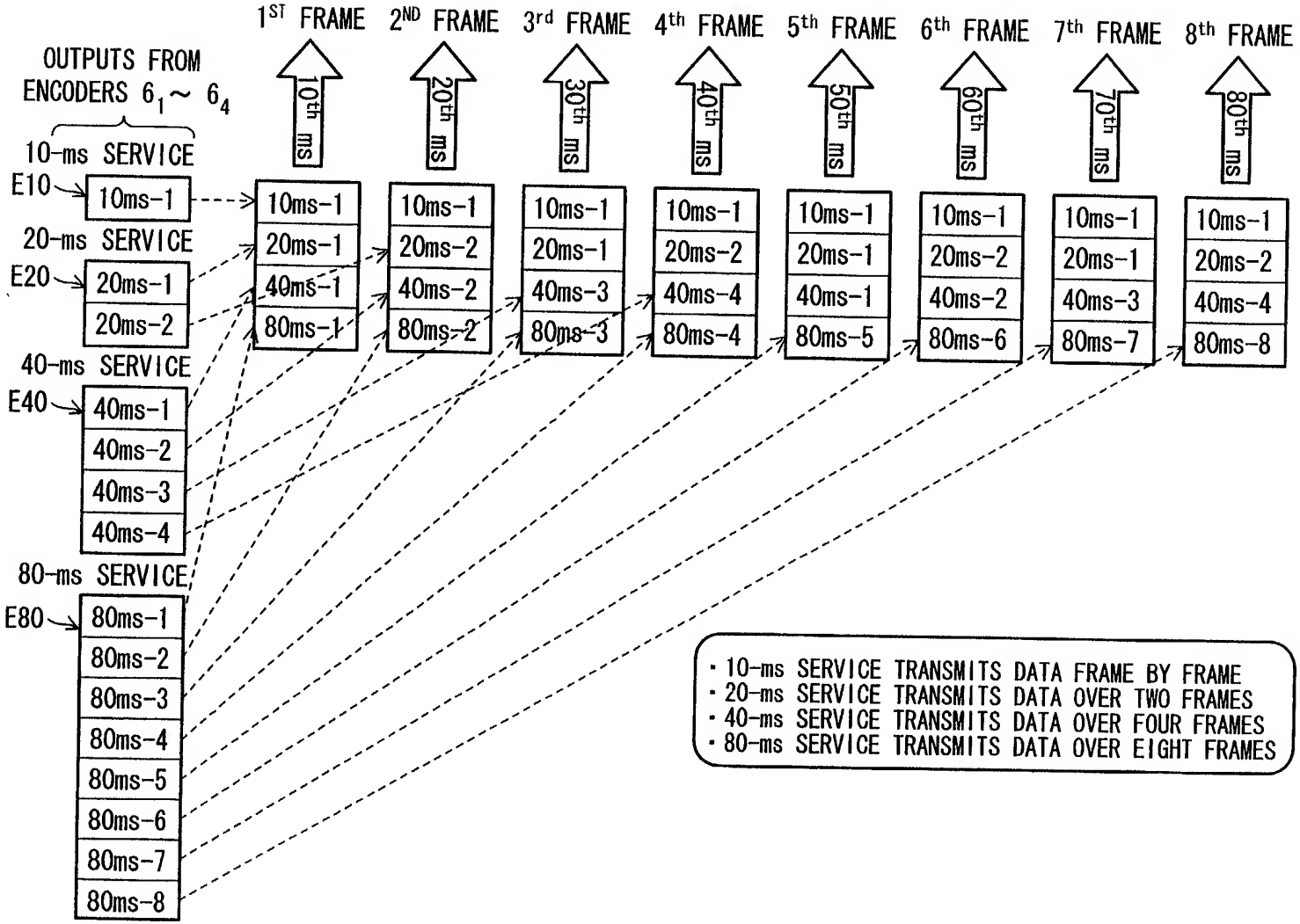

1ST FRAME
2ND FRAME
3rd FRAME
4th FRAME
5th FRAME
6th FRAME
7th FRAME
8th FRAME
OUTPUTS FROM ENCODERS 6_1 ~ 6_4
10-ms SERVICE
E10
10ms-1
20-ms SERVICE
E20
20ms-1
20ms-2
40-ms SERVICE
E40
40ms-1
40ms-2
40ms-3
40ms-4
80-ms SERVICE
E80
80ms-1
80ms-2
80ms-3
80ms-4
80ms-5
80ms-6
80ms-7
80ms-8
10th ms
20th ms
30th ms
40th ms
50th ms
60th ms
70th ms
80th ms
10ms-1
20ms-1
40ms-1
80ms-1
10ms-1
20ms-2
40ms-2
80ms-2
10ms-1
20ms-1
40ms-3
80ms-3
10ms-1
20ms-2
40ms-4
80ms-4
10ms-1
20ms-1
40ms-1
80ms-5
10ms-1
20ms-2
40ms-2
80ms-6
10ms-1
20ms-1
40ms-3
80ms-7
10ms-1
20ms-2
40ms-4
80ms-8
• 10-ms SERVICE TRANSMITS DATA FRAME BY FRAME
• 20-ms SERVICE TRANSMITS DATA OVER TWO FRAMES
• 40-ms SERVICE TRANSMITS DATA OVER FOUR FRAMES
• 80-ms SERVICE TRANSMITS DATA OVER EIGHT FRAMES

FIG. 20

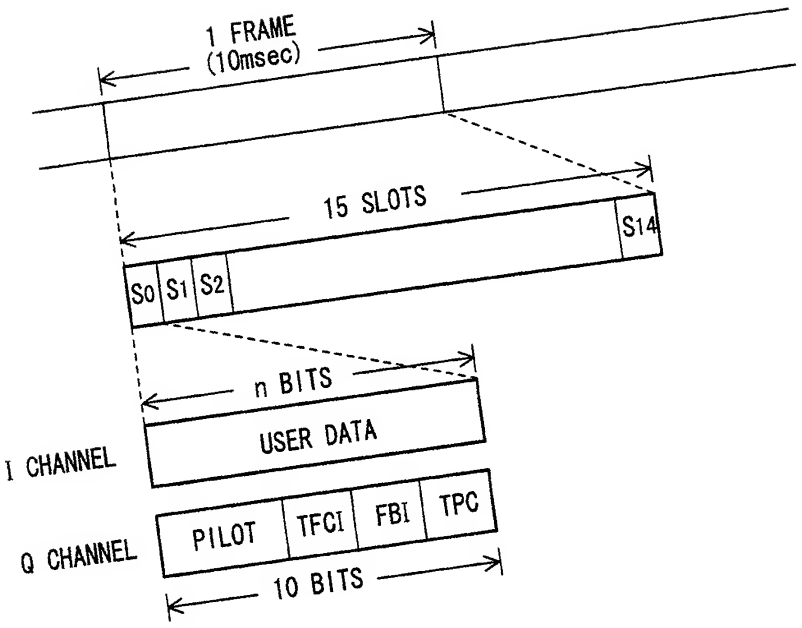

1 FRAME
(10msec)
15 SLOTS
S0
S1
S2
S14
n BITS
USER DATA
I CHANNEL
Q CHANNEL
PILOT
TFCI
FBI
TPC
10 BITS

FIG. 21

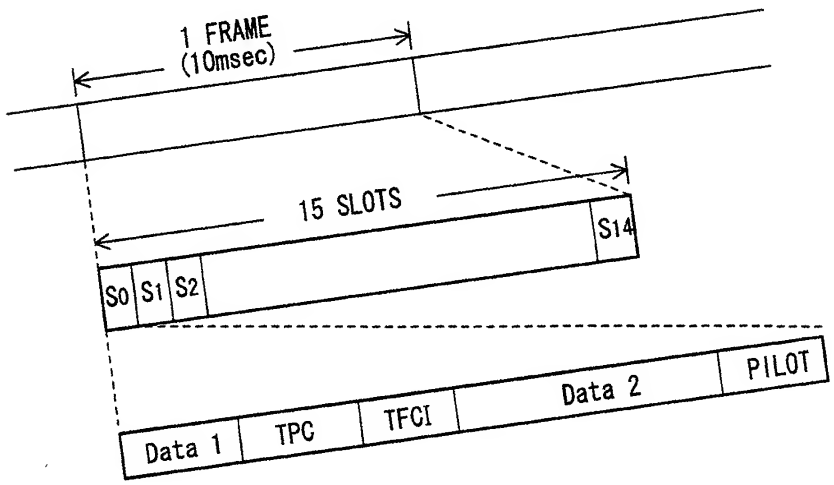

1 FRAME
(10msec)
15 SLOTS
S0
S1
S2
S14
Data 1
TPC
TFCI
Data 2
PILOT

FIG. 22

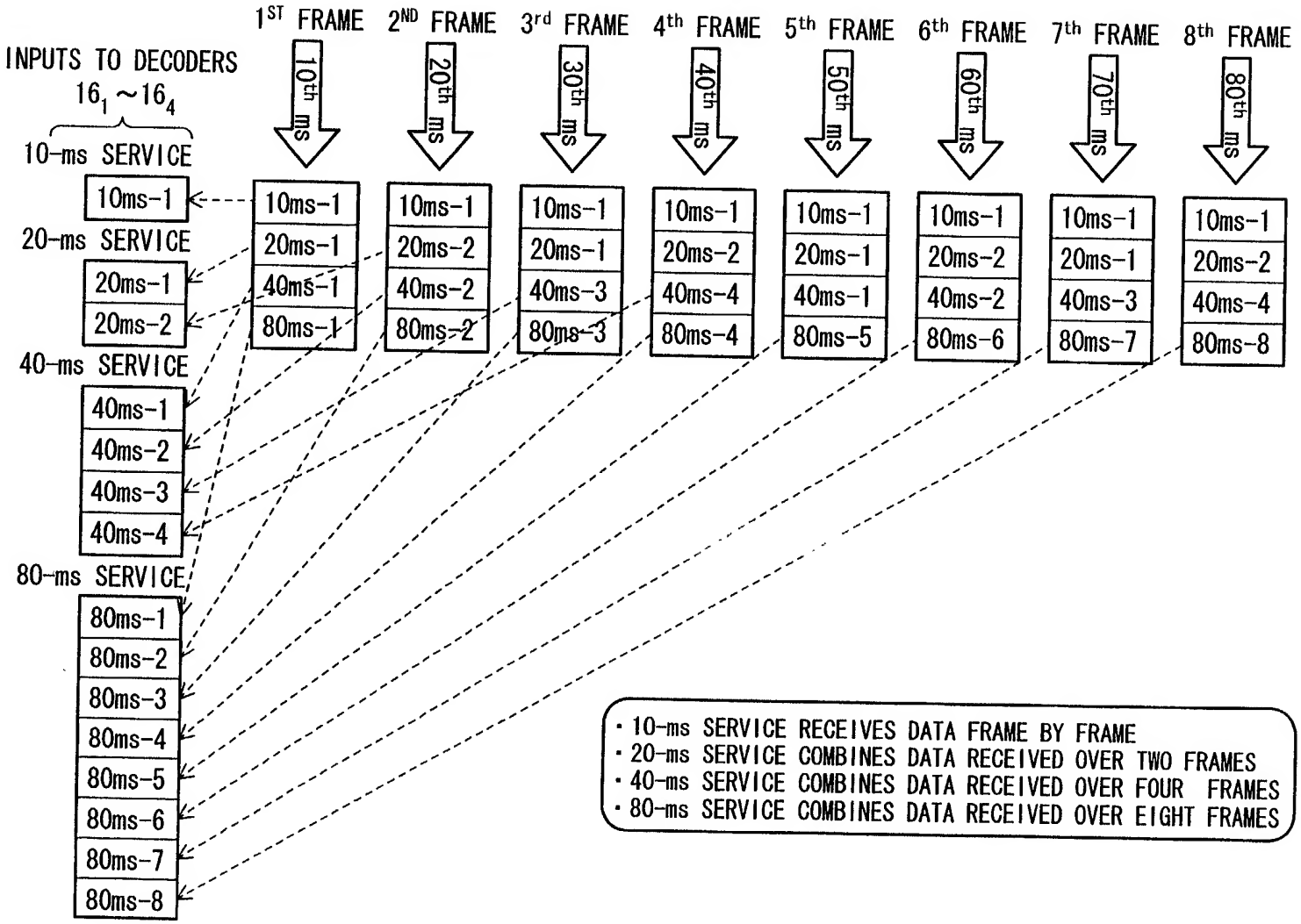
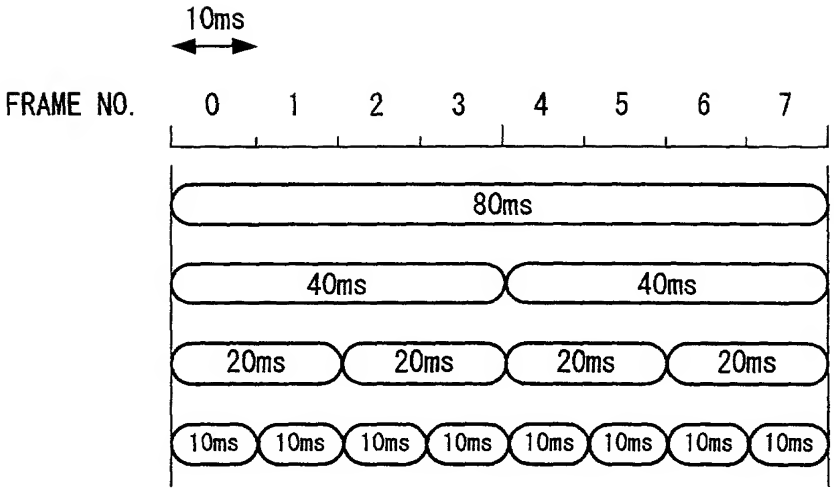

1ST FRAME
2ND FRAME
3rd FRAME
4th FRAME
5th FRAME
6th FRAME
7th FRAME
8th FRAME
10th ms
20th ms
30th ms
40th ms
50th ms
60th ms
70th ms
80th ms
INPUTS TO DECODERS
16₁ ~16₄
10-ms SERVICE
10ms-1
20-ms SERVICE
20ms-1
20ms-2
40-ms SERVICE
40ms-1
40ms-2
40ms-3
40ms-4
80-ms SERVICE
80ms-1
80ms-2
80ms-3
80ms-4
80ms-5
80ms-6
80ms-7
80ms-8
10ms-1 20ms-1 40ms-1 80ms-1
10ms-1 20ms-2 40ms-2 80ms-2
10ms-1 20ms-1 40ms-3 80ms-3
10ms-1 20ms-2 40ms-4 80ms-4
10ms-1 20ms-1 40ms-1 80ms-5
10ms-1 20ms-2 40ms-2 80ms-6
10ms-1 20ms-1 40ms-3 80ms-7
10ms-1 20ms-2 40ms-4 80ms-8
· 10-ms SERVICE RECEIVES DATA FRAME BY FRAME
· 20-ms SERVICE COMBINES DATA RECEIVED OVER TWO FRAMES
· 40-ms SERVICE COMBINES DATA RECEIVED OVER FOUR FRAMES
· 80-ms SERVICE COMBINES DATA RECEIVED OVER EIGHT FRAMES

FIG. 23



EP 3 968 536 A1

20070709 9E8/E00T

FIG. 24

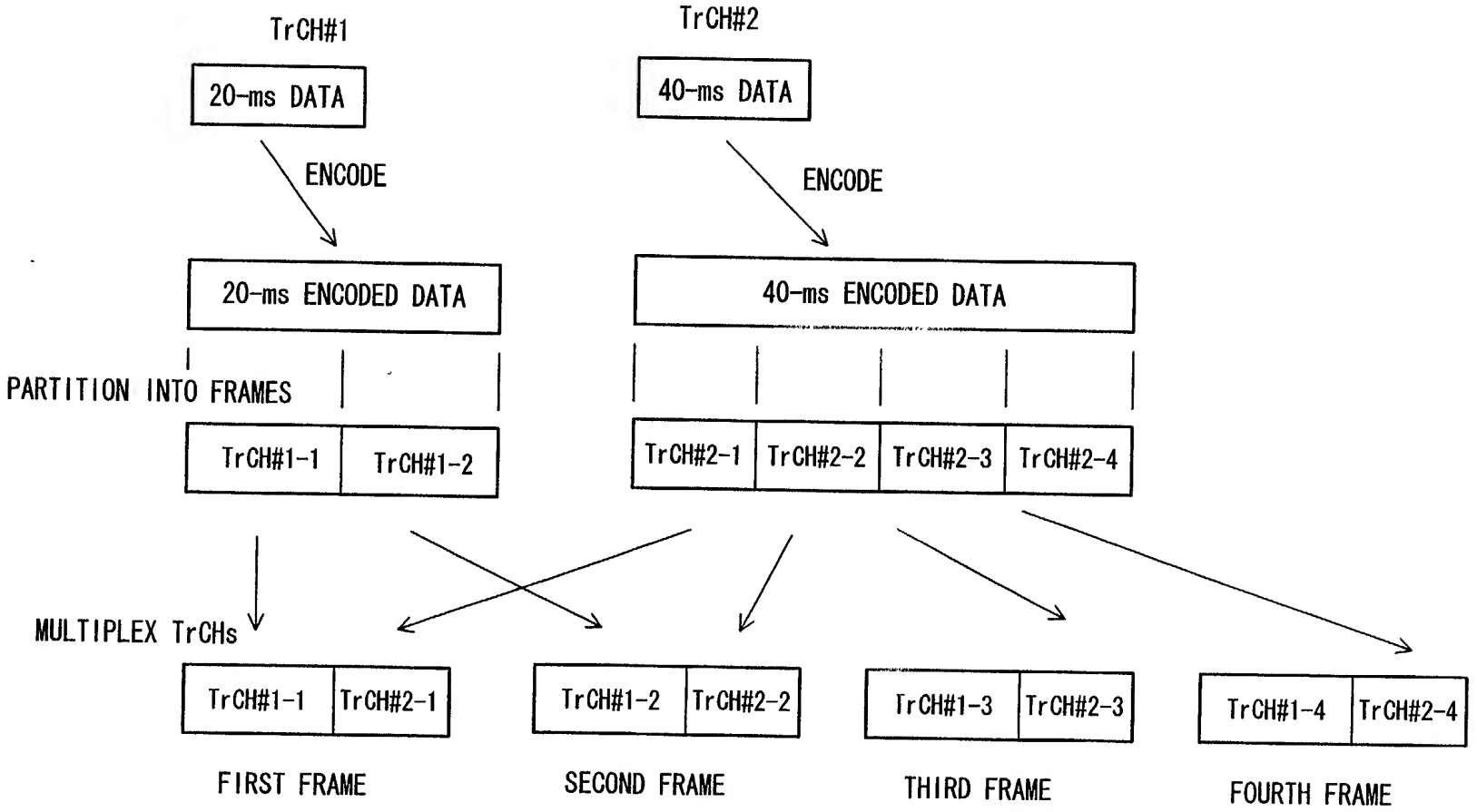


FIG. 25

EXAMPLE OF TrCH FORMATS

TFI	FORMAT OF TrCH#1	FORMAT OF TrCH#2
0	336bit × 0	148bit × 0
1	336bit × 1	148bit × 1
2	336bit × 2	-
3	336bit × 4	-

FIG. 26

EXAMPLE OF TFCIs

TFCI	TFI OF TrCH#1	TFI OF TrCH#2
0	0	0
1	0	1
2	1	0
3	1	1
4	2	0
5	2	1
6	3	0
7	3	1

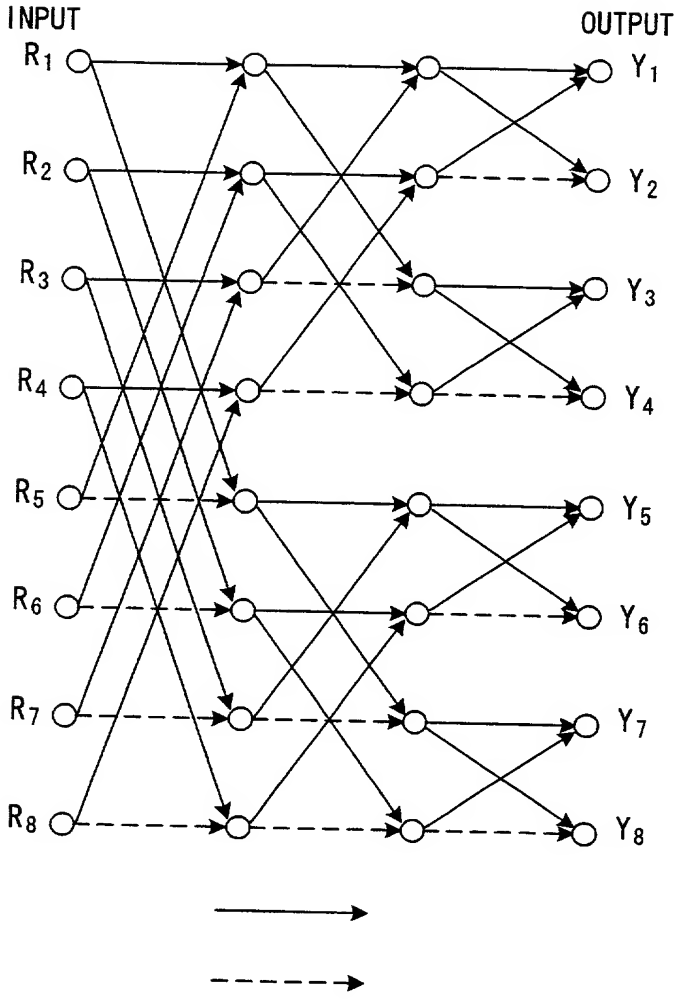
FIG. 27

TFI STRUCTURE AND TFCI AT MULTIPLEXING OF TrCHs

FRAME	TFI		TFCI
	TrCH#1	TrCH#2	
FIRST FRAME	2	1	5
SECOND FRAME	2	1	5
THIRD FRAME	1	1	3
FOURTH FRAME	1	1	3

EP 0 969 688 A1

FIG. 28



EP 3 595 180 A1